

**REPORT ON THE STATUS OF THE FACILITIES AND INFRASTRUCTURE  
PROGRAM AT SCIENCE LABORATORIES  
AS OF SEPTEMBER 30, 2006**

**Background**

The House Report (107-112, page 116) accompanying the FY 2002 House Energy and Water Development Appropriations Bill requests that the Department of Energy (DOE) establish a new Facilities and Infrastructure (F&I) program to improve the facilities and infrastructure at DOE Office of Science (SC) laboratories. It directs that at least 25 percent of this funding be used to dispose of excess facilities that will provide the greatest impact on reducing long-term costs and risks.

It also requests that the Department provide a semi-annual report on the status of the F&I program to the Committee on Appropriations. Specifically, the report states that:

The Department is to provide a semi-annual report to the Committee on the status of the facilities and infrastructure program. The report should include the current priority list of proposed facilities and infrastructure projects including cost and schedule requirements. For each site, the report is to include: a current ten-year site plan that demonstrates the reconfiguration of its facilities and infrastructure to meet its missions and to address its long-term operational costs and return on investment; the current budget for all facilities and infrastructure funding in this program, as well as all funding for maintenance and infrastructure upgrades funded through other parts of the budget; and the current status of each facilities and infrastructure project compared to the original baseline cost, schedule, and scope.

**Reporting**

This is the tenth semi-annual report on the status of the SC F&I program as of September 30, 2006, for the second half of FY 2006.

**Overview**

The Office of Science operates ten SC laboratories and the Oak Ridge Institute for Science and Education (ORISE), and has some facilities at Lawrence Livermore National Laboratory and Sandia National Laboratories. Together at these locations, SC has 1,512 operational buildings (21 million sq. ft. of space) with an estimated replacement plant value of \$8.4 billion. In terms of square footage, 55 percent (12 million sq. ft.) is over 40 years old, while 30 percent (6 million sq. ft.) is over 50 years old. The average age of active buildings at

these sites is 35 years. SC is responsible for disposing of assets at sites designated as SC's when they become excess, regardless of which office in DOE, or its predecessor agencies, may have been responsible for their construction and operation.

The FY 2006 funding for facilities and infrastructure at SC sites, as well as for SC facilities at non-SC sites, is shown in Table 1. Direct funding of \$76.8 million is provided by SC research programs for General Plant Project (GPP) funding (i.e., projects which cost less than \$5 million) and by the Science Laboratories Infrastructure (SLI) program for general purpose facilities line item construction projects (i.e., projects which cost \$5 million or more) and excess facilities disposition projects. Indirect funding of \$174.8 million is provided for laboratory maintenance and Institutional GPP via laboratory overhead and space charges on every public and private organization sponsoring work at each site.

The SLI Excess Facilities Disposition (EFD) subprogram was established in FY 2002 to address the backlog of excess facilities at SC's aging laboratories. Through FY 2006, the EFD subprogram has removed approximately 460,000 sq. ft. and cleaned up 630,000 sq. ft. for reuse.

The Department requires each site to update its Ten Year Site Plan (TYSP) annually. The TYSPs identify and prioritize facilities and infrastructure projects which sites would like to undertake, including plans for excess facilities, to adequately support mission needs. The 2005 TYSPs for SC sites are available at the following website: <http://www.sc.doe.gov/sc-80/sc-82/tyssp.shtml>.

### **Proposed Excess Facilities Disposition Projects**

The list of the current backlog of EFD projects at SC sites is shown in Table 2. It is an update of the information in the 2005 TYSPs and the previous semi-annual report. It also shows those projects which have been selected for funding in FY 2007 based on the President's budget request of \$16,348,000 for the EFD subprogram. It should be noted that the FY 2007 funding also includes \$175,000 for External Independent Reviews (EIRs) of SLI projects, whose reviews are funded under the EFD subprogram. For projects which may be funded after FY 2007, prioritization in Table 2 is based on square footage removed or cleaned up.

It should be noted that the listed backlog of EFD projects does not include facilities at SC sites that are in the baseline of the Office of Environmental Management (EM) for disposition, or that are currently being considered for inclusion in the EM baseline (e.g., 569,000 sq. ft. of SC buildings at Y-12).

The EFD projects are either facility demolitions or cleanups for reuse. Demolitions of buildings reduce operating costs and provide space to offset new construction, in accordance with Congressional direction to offset new building space with the removal of existing building space. Demolitions also provide land for reuse and reduce safety and environmental risks.

Cleanups for reuse reclaim usable space by removing legacy equipment and eliminate the need for protective measures by eliminating chemical or radiological contamination. Such projects improve a site's space utilization.

The estimated disposal cost for the facilities shown in Table 2, Page 6, is approximately \$326 million, an increase of \$1 million from the previous semi-annual report. This increase is due to addition of one project at Argonne National Laboratory (Demolition of Building 40, whose operation was funded by Argonne and NNSA) which was inadvertently omitted from the previous report. The area to be cleaned up or removed is approximately 532,000 sq. ft., and the annual surveillance and maintenance (S&M) cost is approximately \$2,863,000.

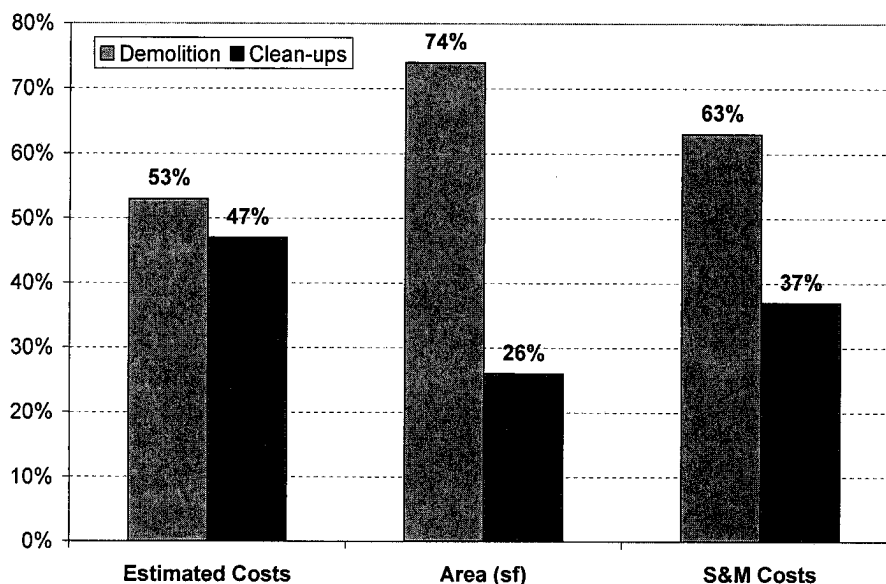
The table below shows the estimated disposal costs, square footage, and S&M cost savings by laboratory. It shows that \$2,471,000 of the S&M cost, or 86 percent of total annual S&M costs for SC, is due to the hot cells and other contaminated facilities at Argonne National Laboratory, which were operated during their useful lives by organizations other than SC. As indicated above, SC is responsible for disposing of those assets at a site designated as SC's, when they become excess, regardless of which office in DOE, or its predecessor agencies, may have been responsible for their construction and operation.

**Summary of Current Excess Facilities by Lab**

Lab	Disposal Cost (\$000)	Sq. Ft.	S&M Savings (\$000)
ANL	\$185,289	134,657	\$2,471
BNL	\$44,140	41,335	\$225
LBNL	\$83,544	142,379	\$0
ORNL	\$7,527	163,531	\$66
Ames	\$3,100	35,000	\$0
PPPL	\$202	6,840	\$55
LLNL	\$500	4,333	\$46
SLAC	\$2,100	4,000	\$0
Total	\$326,402	532,075	\$2,863

As shown in the chart on the next page, demolition projects account for approximately 53 percent of the total estimated cost of currently excess facilities, approximately 74 percent of the total area, and approximately 63 percent of the annual S&M cost reduction.

### Comparison of Demolition and Cleanup Projects for Currently Excess Facilities at SC Sites



Individual projects and estimated funding amounts shown are subject to revision based on evolving program priorities, including risk reduction, footprint reduction, cost savings, and availability of space/land for new research activities. They are also subject to change based on more detailed planning and experience gained from disposition of current projects.

#### Status of Ongoing EFD Projects

The FY 2006 EFD funding supported 18 projects, six of which were continuations of projects begun in previous years. The current status of these projects is shown in Table 3.

The Bevatron project is a large project with an estimated cost of \$65 million to \$75.3 million. The original D&D approach for Building 51 and the Bevatron was to use the existing 50 year old crane in Building 51, which covers the Bevatron, to remove the shielding blocks and beam line. The speed of the crane meant the project would take four to five years. A review team proposed an alternative approach of first removing Building 51 entirely and then employing two or more modern cranes to remove the shielding blocks and beam line quickly and efficiently. This new approach was selected at Critical Decision 1—Approve Alternative Selection and Cost Range—in June 2006 and allows the removal portion of the project to be completed over a two year period, reducing project costs 10 to 20 percent and increasing safety. Its demolition will be funded over several years, though executed over only two years.

As indicated in the previous report, two projects funded with FY 2005 funds were not yet completed as of March 31, 2006. They have since been completed. These projects are:

1. Demolition of Building 370, Alkali Metal Loop at ANL
2. Demolition of Health Physics Calibration and Service Laboratory at PPPL

**Table 1 - FY 2006 Facilities and Infrastructure Funding at Office of Science Sites (\$1000s)**

Laboratory	General Purpose Facilities Line Item Construction	General Plant Project (GPP) (Projects less than \$5M)	Excess Facilities Disposition*	Total SC Direct- Funded Infrastructure Investment**	Maintenance***	Institutional GPP (IGPP)***	Total Investment
Ames		\$ 631	\$ 45	\$ 676	\$ 1,123		\$1,799
ANL		\$ 6,580	\$ 770	\$ 7,350	\$ 27,386		\$34,736
BNL	\$ 3,646	\$ 7,729	\$ 600	\$ 11,975	\$ 29,028		\$41,003
LBL	\$ 3,780	\$ 4,864	\$ 10,900	\$ 19,544	\$ 16,920		\$36,464
FNAL		\$ 6,666	\$ 125	\$ 6,791	\$ 12,282		\$19,073
LLNL		\$ -	\$ 150	\$ 150	\$ 2,767		\$2,917
ORNL		\$ 4,347	\$ 858	\$ 5,205	\$ 48,390	\$ 10,000	\$63,595
ORISE		\$ 974	\$ 768	\$ 1,742	\$ 869		\$2,611
ORO		\$ -		\$ -	\$ 1,891		\$1,891
PNNL	\$ 4,950	\$ 5,123		\$ 10,073	\$ 1,865	\$ 2,000	\$13,938
PPPL		\$ 1,910		\$ 1,910	\$ 5,177		\$7,087
Sandia		\$ 256		\$ 256	\$ 1,960		\$2,216
SLAC	\$ 5,314	\$ 4,419		\$ 9,733	\$ 9,324		\$19,057
TJNAF		\$ 1,127		\$ 1,127	\$ 2,861		\$3,988
NDRL		\$ 20		\$ 20	\$ 153		\$173
All Others			\$ 275	\$ 275	\$ 844		\$1,119
<b>Total SC Budget</b>	<b>\$ 17,690</b>	<b>\$ 44,646</b>	<b>\$ 14,491</b>	<b>\$ 76,827</b>	<b>\$ 162,840</b>	<b>\$ 12,000</b>	<b>\$251,667</b>

\* The total of \$14,491 shown is the result of a rescission from the FY 2006 appropriated amount of \$14,637.

\*\* Total of SLI Infrastructure Line Item Construction, GPP and Excess Facilities Disposition

\*\*\* Funded from laboratory overhead or space charges. IGPP is a pilot program currently under review.

**Table 2 - Current Backlog of Facility Disposition Projects at Office of Science Sites  
September 30, 2006**

Lab	Facility Eligible for Disposal	Project Type	Total Estimated Cost (TEC)-\$K*	Square Footage	Annual S&M Savings-\$K**	Funding Year	Funding Request-\$K
ANL	Bldg. 40 Demolition-Ongoing Project	Demolition	\$1,313	4,896	\$7	2007	\$221
ANL	Building 306 A, B, C & Trailer Demolition	Demolition	\$120	1,116	\$11	2007	\$120
ANL	Building 205 A-141 Cleanup	Cleanup	\$159	484	\$5	2007	\$159
BNL	Bldg 650/650A Demolition-Ongoing Project	Demolition	\$6,800	13,654	\$70	2007	\$697
LBNL	Bevatron Demolition-Ongoing Project	Demolition	\$83,000	127,000		2007	\$14,000
ORNL	Demolish HFIR Trailer-7957	Demolition	\$24	500		2007	\$24
ORNL	Demolish Two Unnumbered Abandoned Trailers in HFIR Lot	Demolition	\$50	1,000		2007	\$50
ORNL	Demolish Freels Bend Machine Storage Shed-XG1402	Demolition	\$12	245		2007	\$12
ORNL	Demolish Variable Dose Irradiation Facility (VDRIF)-XG1404	Demolition	\$176	3,623		2007	\$176
ORNL	Demolish Underground Silo-XH1404	Demolition	\$100	3,800		2007	\$100
ORNL	Demolish Freels Bend Farm Pump House-XH1406	Demolition	\$5	100		2007	\$5
ORNL	Demolish Freels Bend Shielding Wall Donkey Arena-XG1410	Demolition	\$115	2,375		2007	\$115
ORNL	Demolish Barn D-XF1301	Demolition	\$389	8,025		2007	\$389
ORNL	Demolish Shed D Butler-XF1302	Demolition	\$97	2,000		2007	\$97
ORNL	Demolish Walker Branch Weir Instrument Trailer-934	Demolition	\$6	96		2007	\$6
ORNL	Demolish ATDD/NOAA Facility-943	Demolition	\$2	656		2007	\$2
ORNL	Demolish Containment Building-7600	Demolition	\$5,000	107,922	\$5	TBD	TBD
ANL	Building 330 Chicago Pile 5 (CP-5) Demolition	Demolition	\$5,500	52,743	\$25	TBD	TBD
AMES	Decontamination of Harley Wilhelm Hall	Cleanup	\$3,100	35,000		TBD	TBD
ANL	Bldg. 203 Cleanup of Radium Contamination	Cleanup	\$3,000	23,964		TBD	TBD
ANL	Bldg. 200 Hot Cells	Cleanup	\$91,215	23,168	\$494	TBD	TBD
ORNL	Bldg. 3503 Cleanout and Deactivation	Cleanup	\$320	13,716	\$26	TBD	TBD
ANL	Building 212 Alpha Gamma Hot Cell Facility	Demolition	\$50,000	12,500	\$1,500	TBD	TBD
BNL	Bldg 491 Demolition	Demolition	\$18,070	11,653	\$100	TBD	TBD
ORNL	Demolish Barn E Deer Checking Station (3 separate structures)-XF1303	Demolition	\$398	8,025		TBD	TBD
ORNL	Bldg. 2018 Demolition	Demolition	\$560	7,803	\$32	TBD	TBD
PPPL	Experimental Subsystem Removals	Cleanup	\$202	6,840	\$55	TBD	TBD
BNL	Bldg 901 D&D and Removal of Dynamitron	Cleanup	\$7,970	6,740	\$25	TBD	TBD
BNL	Bldg 830 D&D & Removal of Hot Cells and Associated Equipment	Cleanup	\$11,000	5,550	\$25	TBD	TBD
LBNL	Bldg. 50D Demolition	Demolition	\$300	4,959		TBD	TBD
LBNL	Bldgs. 29A - C Demolition	Demolition	\$90	4,631		TBD	TBD
LLNL	Remove Bioscience Research Legacy Facilities at B377	Demolition	\$500	4,333	\$46	TBD	TBD
ANL	Bldg. 206 High Bay, D-Wing, and B-133 Equipment and Sodium Tanks Cleanup	Cleanup	\$800	3,000	\$18	TBD	TBD
BNL	Bldg 462 D&D of Hot Shop	Cleanup	\$225	2,495	\$3	TBD	TBD

**Table 2 - Current Backlog of Facility Disposition Projects at Office of Science Sites  
September 30, 2006**

ANL	Bldg. 308 Cathode Processor (CP) Removal	Cleanup	\$550	1,200	\$16	TBD	TBD
ANL	Bldg. 310 A-128 and A-114 Cleanup	Cleanup	\$525	1,200	\$11	TBD	TBD
ORNL	Demolish Interim Grounds Equipment Storage-7020	Demolition	\$48	1,056		TBD	TBD
ANL	Bldg. 205 F-111 Vault Cleanup & Hood Removal	Cleanup	\$500	870		TBD	TBD
ANL	Bldg. 205 F-111 Vault Cleanup & Hood Removal-Ph II	Cleanup	\$500	870		TBD	TBD
ANL	Bldg. 205 X-125 Cleanup	Cleanup	\$352	716	\$6	TBD	TBD
ORNL	Bldg. 3008 Demolition	Demolition	\$71	565	\$2	TBD	TBD
ORNL	Demolish Museum Office Trailer-XC1405	Demolition	\$27	552		TBD	TBD
LBNL	Bldg. 71E Demolition	Demolition	\$15	513		TBD	TBD
LBNL	Bldg. 75E Demolition	Demolition	\$20	410		TBD	TBD
LBNL	Bldg. 73A Demolition	Demolition	\$15	403		TBD	TBD
ORNL	Demolish Storage House/R&P's-7610	Demolition	\$17	378		TBD	TBD
ANL	Bldg. 202 Lab Radioactive and Biological Contaminated Equipment Demolition and Cleanup	Cleanup	\$75	300	\$12	TBD	TBD
ANL	Bldg. 206 NAK Heat Exchanger Removal	Cleanup	\$500	300	\$10	TBD	TBD
ORNL	Demolish Barn E Silo-XF1304	Demolition	\$50	254		TBD	TBD
ANL	Bldg. 203 Storage Hole Cleanup	Cleanup	\$50	240	\$1	TBD	TBD
ANL	Bldg. 365 IPNS Modulator Disposition	Cleanup	\$580	200	\$1	TBD	TBD
ORNL	Demolish ESD/NOAA USAF Instrument Trailer-822	Demolition	\$13	200		TBD	TBD
ORNL	Demolish Airways Becan Lighthouse-969	Demolition	\$4	160		TBD	TBD
ORNL	Demolish Stack Monitoring House-7609	Demolition	\$6	144		TBD	TBD
ORNL	Bldg. 3111 Demolition	Demolition	\$25	100	\$1	TBD	TBD
ORNL	Demolish Steel Yard Office-7060	Demolition	\$5	100		TBD	TBD
ORNL	Demolish Sentry Post #20b-7072	Demolition	\$4	72		TBD	TBD
ORNL	Demolish PAM Station 041-XF1307	Demolition	\$3	64		TBD	TBD
ANL	Clean-up Historic Tanks and Debris in the 398 and 317 Bone Yard Project	Cleanup	\$350		\$2	TBD	TBD
ANL	Clean-up Historic Vessels and Debris in Misc. Site Bone Yards Project	Cleanup	\$500		\$1	TBD	TBD
SLAC	Clean-up Portion of Sector 17 "Boneyard"	Cleanup	\$1,500			TBD	TBD
	<b>Current Backlog of Demolitions</b>		<b>\$173,129</b>	<b>394,332</b>	<b>\$1,801</b>		
	<b>Current Backlog of Cleanups</b>		<b>\$153,273</b>	<b>137,743</b>	<b>\$1,062</b>		
	<b>Current Backlog of Demolitions and Cleanups</b>		<b>\$326,402</b>	<b>532,075</b>	<b>\$2,863</b>		

**Table 3 - Projects Funded by the SC Excess Facilities Disposition Program in FY 2006**  
**September 30, 2006**

Project Number	Project	Project Type	FY 2006 Funding-\$K	Square Footage	Status of Project	Cost/Scope/Schedule
05-AMES-2	Waste Handling Facility and Hydrogen Test Cell Facility Closeout and Demolition-Cont'd	Demolition	\$ 45	9,900	Completed	Completed
	<b>Total FY 2006</b>		<b>\$ 45</b>	<b>9,900</b>		
05-ANL-5	Building 40 Demolition Project-Cont'd	Demolition	\$ 276	NA*	On-going	Project scope and cost reduced to \$253K to offset cost of completing the FY 05 Bldg. 370 Alkali Metal Loop Demolition Project, whose cost/scope/schedule increased due to discovery of sodium-potassium alloy. Completion expected 1st. Qtr. FY 07.
06-ANL-1	Building 374A Demolition Project	Demolition	\$ 329	1,651	On-going	Project is behind schedule due to unanticipated radiological and safety issues with passivation of the sodium loop. Completion expected 1st. Qtr FY 07.
06-ANL-2	Site Beryllium Remediation Project - Selected Rooms (Phase 1)	Cleanup	\$ 165	9,000	Deferred	Project was deferred and funds were redirected to the FY 05 Bldg. 370 Alkali Metal Loop Demolition Project, whose cost and duration increased due to discovery of sodium-potassium alloy.
	<b>Total FY 2006</b>		<b>\$ 770</b>	<b>10,651</b>		
05-BNL-1	Bldg 527 Demolition-Cont'd	Demolition	\$ 45	2,869	On-going	Building demolished. Slab to be deconned and disposed.
05-BNL-2, 5 & 7	Bldg. 197, 933B and 934 Demolition-Cont'd	Demolition	\$ 25	NA**	Completed	Within baseline
06-BNL-3	Bldg 86 Demolition	Demolition	\$ 270	11,097	Completed	Within baseline
06-BNL-4	Bldg 422A Demolition	Demolition	\$ 60	1,264	Completed	Within baseline
06-BNL-5	Bldg 628 Demolition	Demolition	\$ 30	403	Completed	Within baseline
06-BNL-6	Bldg 649 Demolition	Demolition	\$ 30	615	Completed	Within baseline
06-BNL-7	Bldg 482 Demolition	Demolition	\$ 115	3,204	Completed	Within baseline
06-BNL-8	Bldg 650/650A Demolition - Phase I	Demolition	\$ 25	NA***	Completed	Stabilization of Bldg. 650 and and demolition of Bldg. 650A have been combined into one project because of their proximity. Bldg. 650A to be demolished in FY 07.
	<b>Total FY 2006</b>		<b>\$ 600</b>	<b>19,452</b>		
05-FNAL-1	Demolition of Trailers T-017, T-024, T-025 and T-069	Demolition	\$ 125	1,440	Completed	Within baseline. This project replaced Removal of 2 Muon Enclosures.
	<b>Total FY 2006</b>		<b>\$ 125</b>	<b>1,440</b>		
04-LBNL-1	Bevatron Demolition Project-Cont'd	Demolition	\$ 10,900	NA****	On-hold	Critical Decision-1 to begin preliminary engineering was approved in June 2006. Project on-hold until restart in FY 07, depending on funding.
	<b>Total FY 2006</b>		<b>\$ 10,900</b>	<b>0</b>		
06-LLNL-1	Demolish SC Trailer 4325 and Bldg. 363, Biosciences Research Facility	Demolition	\$ 150	3,700	On-going	This project replaced Demolition of Bioscience Research Legacy Facilities at Bldg. 3703
	<b>Total FY 2006</b>		<b>\$ 150</b>	<b>3,700</b>		
06-ORISE-1	Demolition of Bldg. SC-2, Isotope Laboratory, and Bldg. SC-5, Large Animal Containment Facility	Demolition	\$ 768	6,593	On-going	Bldg. SC-5 demolished. Pad of Bldg. SC-2 remains to be removed.
06-ORISE-2	Demolition of Bldg. SC-4	Demolition		3,596	Completed	Additional scope funded from Project 06-ORISE-1 savings.
	<b>Total FY 2006</b>		<b>\$ 768</b>	<b>\$ 10,189</b>		
06-ORNL-1	Solway and Freels Bend Excess Facilities Demolition (XG1413, XF158X, XF1580, XH1402, XH1405, XG1412, XG1403, XG1405, XG1406, XG1407, XG1408, XG1409 and XG1411)	Demolition	\$ 858	49,566	Completed	Within baseline
	<b>Total FY 2006</b>		<b>\$ 858</b>	<b>49,566</b>		
	<b>FY 2006 Demolitions</b>		<b>\$ 14,051</b>	<b>95,898</b>		
	<b>FY 2006 Cleanups</b>		<b>\$ 165</b>	<b>9,000</b>		
	<b>External Independent Reviews</b>		<b>\$ 275</b>			
	<b>FY 2006 Totals</b>		<b>\$ 14,491</b>	<b>104,898</b>		

\* 4,896 sq. ft. will be accounted for after project is completed.

\*\* 3,535 sq. ft. accounted for in FY 2005.

\*\*\* Scope of Phase I was to stabilize Bldg. 650; no space was removed.

\*\*\*\* 125,000 sq. ft. of excess space elimination will be accounted for after project is completed.